

XXIV Harzseminar

Strukturbildung in Chemie und Biophysik

Goslar-Hahnenklee (OT Bockswiese), 23. – 25. Februar 2020

Organizers: Markus Bär, Eberhard Bodenschatz, Marcus Hauser, Ronald Imbihl

Supported by Berlin Center for the Study of Complex Chemical Systems - BCSCCS e. V.

Programme

Sunday, 23 February

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| 15:30 – 15:40 | Opening |
| 15:40 – 16:15 | Niklas Manz (Wootser College) Waves on the tongue |
| 16:15 – 16:35 | Christian Westendorf (MPI DS Göttingen) Synchronization of Cardiomyocytes in 2D and 3D Cell Culture |
| 16:35 – 16:55 | Markus Bär (PTB Berlin) Mechanism for low energy defibrillation |
| 16:55 – 17:15 | coffee break |
| 17:15 – 17:35 | Simon Wassing (MPI DS Göttingen) Simulations of current densities in cardiac defibrillation and the influence of electrode positioning |
| 17:35 – 17:55 | Justine Wolter (MPI DS Göttingen) Computational study determining the dominant frequency of cardiac tissue |
| 17:55 – 18:15 | Roland Stenger (MPI DS Göttingen) Locating excitation sites and spiral waves from multichannel-ECG signals |
| 18:15 – 18:35 | break |
| 18:30 – 19:05 | Rüdiger Kürsten (Uni Greifswald) Correlation analysis in the study of nonequilibrium phase transition with applications to self-propelled particles |
| 19:05 – 19:25 | Lutz Schimansky-Geier (HU Berlin) Demixing of two species with diffusivities dependent on densities: Simulations and analysis |
| 19:25 – 20:00 | Frank Endres (TU Clausthal-Zellerfeld) The interface electrode/electrolyte in ionic liquids and its influence on the deposition of materials |

20:00 dinner

Monday, 24 February

09:00 – 09:35 Arik Yochelis (Ben Gurion University of the Negev)
Novel Arnol'd tongue shapes in spatially extended parametrically forced oscillations and their relevance to hearing

09:35 – 09:55 Albert von Kenne (PTB Berlin)
Fluid transport by metachronal waves in ciliary chains

09:55 – 10:30 Harald Engel (TU Berlin)
Coherent dynamics in oscillatory networks: Phase approximation of relaxation oscillators

10:30 – 10:50 coffee break

10:50 – 11:25 Benjamin Friedrich (TU Dresden)
Fertilization in the sea: sperm chemotaxis in physiological shear flows

11:25 – 11:45 Robert Großmann (Uni Potsdam)
Chemotaxis strategies of bacteria with multiple run modes

11:45- 12:05 Sebastian Heidenreich (PTB Berlin) "Continuum model for bacterial suspensions with density variations

12:40 – 15:30 lunch

15:30 – 16:05 Julian Rode (TU Dresden)
Body axis formation in planarian

16:05 – 16:25 Merthe Schwachenwald (Uni Bremen)
Experimental characterization and theoretic modeling of circular dorsal ruffles

16:25 – 17:00 Isabella Guido (MPI DS Göttingen)
Instabilities of active biopolymer-motor protein systems

17:00 – 17:20 Ralf Stannarius (Uni Magdeburg)
Marangoni flow in thin fluid free-standing films

17:20 – 17:40 Simon Hartmann (Uni Münster)
Gradient dynamics model for drops spreading on polymer brushes

17:40 – 18:00 coffee break

18:00 – 18:20 Kirsten Harth (Uni Magdeburg)
Dynamic wrinkling of thin fluid films

18:20 – 18:55 Uwe Thiele (Uni Münster)
Thin film models of active droplets

18:55 – 19:05 Frohoff-Hülsemann (Uni Münster)
Time periodic behavior in coupled Cahn-Hilliard type dynamics of two conserved order parameters fields

19:05 – 19:25 Patricia Pfeiffer (Uni Magdeburg)
Structures in merging soap bubbles and why surfactant matters

19:30 dinner

Tuesday, 25 February

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| 09:00 – 09:35 | Oleh Omelchenko (Uni Potsdam) Local order parameters and their application for reconstruction of phase models |
| 9:35 – 9:55 | Adrian Fessel (Uni Bremen) Relation between long- and short-time wave dynamics in <i>Physarum polycephalum</i> |
| 9:55-10:15 | Siyu Chen (MPI DS Göttingen) The effect of blue light on <i>Physarum polycephalum</i> cytoplasm flow for different topologies |
| 10:15 - 10:50 | Björn Kscheschinski (MPI DS Göttingen) Calcium as a key regulator in <i>Physarum polycephalum</i> |
| 10:50 – 11:10 | coffee break |
| 11:10 – 11:30 | Sven Flemming (Uni Potsdam) How cortical waves drive fission of motile cells |
| 11:30 – 11:50 | Marcel Hörning (Uni Stuttgart) Spatiotemporal fluctuation analysis of lipid dynamics on the entire <i>Dictyostelium</i> plasma membrane |
| 11:50 - 12:10 | Ted Moldenhawer (Uni Potsdam) A new approach to spatiotemporal cell contour tracking. |
| 12:10 – 12:45 | Benjamin Winkler (PTB Berlin) 3D phase field model for cell motility |
| 12:45 – 12:55 | closing |
| 13:00 | lunch |

How to reach the conference site:

Hotel Niedersachsen, Wiesenstr. 12, Goslar, OT Hahnenklee-Bockswiese, Tel.: 05325/52860
<http://www.hotel-niedersachsen-harz.de>

Arrival by train to Goslar, then take the bus 830 to Goslar-Bockswiese:

23 February: Goslar (ZOB) 12.05 h – Bockswiese 12.25 h
Goslar (ZOB) 14.05 h – Bockswiese 14.25 h

25 February: Bockswiese 13.30 h – Goslar (ZOB) 13.50 h
Bockswiese 14.30 h – Goslar (ZOB) 14.50 h
Bockswiese 15.30 h – Goslar (ZOB) 15.50 h

For the complete timetable, consult <http://www.bahn.de>